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Friday, 15 January 2021

Ms Nicola Falcon  
General Manager Forecasting  
Australian Energy Market Operator  
PO Box 2008  
Melbourne, Victoria, 3001

Dear Ms Falcon

## **RE: AEMO 2020 Forecast Accuracy Report and Forecast Improvement Plan Consultation**

ERM Power Retail Pty Ltd (ERM Power) welcomes the opportunity to respond to the Australian Energy Market Operator's (AEMO) Forecast Accuracy Report (the Report) and Forecast Improvement Plan (the Plan) Consultation

### **About ERM Power**

ERM Power (ERM) is a subsidiary of Shell Energy Australia Pty Ltd (Shell Energy). ERM is one of Australia's leading commercial and industrial electricity retailers, providing large businesses with end to end energy management, from electricity retailing to integrated solutions that improve energy productivity. Market-leading customer satisfaction has fuelled ERM Power's growth, and today the Company is the second largest electricity provider to commercial businesses and industrials in Australia by load<sup>1</sup>. ERM also operates 662 megawatts of low emission, gas-fired peaking power stations in Western Australia and Queensland, supporting the industry's transition to renewables.

<http://www.ermpower.com.au>

<https://www.shell.com.au/business-customers/shell-energy-australia.html>

### **2020 Forecast Accuracy Report**

ERM Power acknowledges the improvements made by AEMO to the 2020 Forecast Accuracy Report compared to previous year's reports. However, we consider that the Report may benefit from further improvements which will improve stakeholder confidence in the data and AEMO statements contained within the Report. These suggested improvements are set out as follows.

Currently the Report is prepared and reviewed entirely by AEMO. As these forecast are a critical part of AEMO's preparation of the Electricity Statement of Opportunities Reliability Forecast, which has the direct capability to result in increased cost outcomes to consumers, we believe that prior to being published, the Report would benefit from review and audit by an independent party selected by either the Australian Energy Regulator or the Reliability Panel. The Report would contain as an appendix, a statement by the independent auditor setting out details of their review including questions asked of AEMO and AEMO's responses.

In Section 3.3 AEMO refers to an adjustment made to data provided by the Clean Energy Regulator for replacement of existing as opposed to installation of new rooftop PV solar capacity. Whilst we support such an adjustment it is unclear from the Report if the adjustment was based on data supplied by the Clean Energy Regulator or was based on an AEMO calculated adjustment factor. We recommend that AEMO include the basis for the adjustment and the adjusted value on a per region basis in future reports.

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<sup>1</sup> Based on ERM Power analysis of latest published information.



AEMO indicates that “AEMO assumes the loss percentage for the latest financial year is a reasonable estimate for losses over the entire forecast period”.<sup>2</sup> We recommend that this assumption be carefully monitored by AEMO as it is unclear to us that with the changing patterns of generation, including the future retirement of strongly connected large synchronous power stations, the loss percentage will remain as stable as AEMO is currently predicting in future years.

The Report includes the statement with regards to the Victorian region maximum demand outcomes that, “Due to extreme wind damaging transmission assets, there was also involuntary load shedding.”<sup>3</sup> The term “involuntary load shedding” has to date been reserved to consumer load which has been reduced or disconnected due to the issue of a National Electricity Rules (NER) Clause 4.8.9 Instruction by AEMO. ERM Power is not aware of AEMO issuing a Clause 4.8.9 Instruction during the period covered by this Report. Whilst load was automatically disconnected by the Network Service Provider’s control system in the Victorian region following a non-credible contingency security islanding event, we are not aware of the occurrence of “involuntary load shedding” as indicated in the Report. We recommend that AEMO maintain the historical convention with regards to use of the term “involuntary load shedding’ in future reports.

We note AEMO’s adjustments to the Victorian region’s maximum demand outcomes as set out in Table 14.<sup>4</sup> Whilst supportive of such adjustments, the Report contains no detail with regards to what loads were interrupted or in the case of the “potential” adjustments, no details of the breakdown of the basis for such adjustment. We recommend that in future reports where AEMO indicates adjustments to observed demand outcomes have been made, additional detail be provided such as the individual connection point and load adjustment.

We support the inclusion of the regional monthly maxima data graphs in the Report.<sup>5</sup> However, we note that the forecast range for both the 50% and 10% probability of exceedance (POE) values are combined as a single distribution. We believe that the graph would provide added value to stakeholders if the 50% and 10% POE ranges were shown as two separate distributions.

To complement the regional monthly maxima data graphs we recommend the addition of a new graph setting out details of the daily maximum temperature on the day of maximum regional demand, the daily maximum temperature during the month (if these are different values), and the historical range of monthly maximum daily temperature outcomes for the relevant regional reference weather station.

In considering the graphs of generator simulated forecast vs actual regional supply<sup>6</sup>, as set out in Section 6 – Supply Forecasts, ERM Power remains concerned that whilst AEMO utilises the full extent of actual generator supply data, this is then compared to a truncated simulated forecast that does not fully represent the full range of simulated supply forecasts used in the modelling. In doing so, AEMO provides a biased representation of actual regional generation supply vs simulated forecast in the Report which can result in a misrepresentation that actual supply outcomes are lower than the simulated forecasts. We believe the full range of simulated forecasts should be represented in the graphs.

In addition, AEMO provides no detail of what reported availability data (maximum availability or PASA availability), on which the actual generator supply outcomes were based. Given the significant range in maximum daily demand outcomes between the highest and tenth highest demand days represented in the graph, generating units may have temporarily withdrawn on the basis that they were simply not required to ensure supply reliability. We recommend AEMO provide additional details in the Report regarding the basis on which actual generator supply data was calculated.

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<sup>2</sup> AEMO 2020 Forecast Accuracy Report pp 20

<sup>3</sup> AEMO 2020 Forecast Accuracy Report pp 31

<sup>4</sup> AEMO 2020 Forecast Accuracy Report pp 31

<sup>5</sup> AEMO 2020 Forecast Accuracy Report Figures 17, 21,25, 29 and 33

<sup>6</sup> AEMO 2020 Forecast Accuracy Report pp 57 - 70



AEMO document - *Regions and Marginal Loss Factors FY2019/20*, sets out the regional boundaries and the associated transmission elements which comprise the inter-regional transmission network elements applicable during financial year 2019/20.<sup>7</sup> The Report includes the statement that “*The Victoria to South Australia inter-regional transmission elements are subject to infrequent high impact events, as shown in Figure 61. The largest event, which was observed in 2019-20, was due to destructive high winds.*” The dual circuit failure of 500 kV transmission lines occurred on the intra-regional transmission network located between the Moorabool and Heywood Terminal Stations in western Victoria. The Victoria to South Australia inter-regional transmission elements are comprised only of the two 275 kV transmission lines between the Heywood Terminal Station in Victoria and the South East substation in South Australia and the associated 275/500 kV transformers at the Heywood Terminal Station.

Similarly, the Report includes the statement that “*The Victoria to New South Wales inter-regional transmission elements are subject to infrequent high impact events as shown in Figure 60. In history, two major impacts from bushfires stand out, namely the 2009 Victorian Black Saturday bushfires, and the 2019-20 Black Summer bushfires.*” Whilst some limited duration outages of the two 330 kV transmission lines between Upper and Lower Tumut substations in NSW and Murray substation in Victoria,<sup>8</sup> which comprise part of the defined Victoria to NSW inter-regional transmission network occurred on the 4 January 2020, the vast majority of transmission line outages associated with the bushfire events in southern NSW in December 2019 and January 2020 were associated with the 330 kV intra-regional transmission lines between Upper and Lower Tumut substations in southern NSW and Sydney, Similarly in February 2009, line outages due to the bushfire events were limited to the two 330 kV intra-regional transmission lines between Dederang substation in northeast Victoria and Melbourne.

It is unclear to ERM Power why AEMO has sought to misrepresent these intra-regional transmission line outages as inter-regional transmission line outages in the Report. We recommend that AEMO correct these significant errors in the Report.

## **2020 Forecast Improvement Plan**

The primary purpose of the various wholesale market reliability forecasting processes<sup>9</sup> prepared and published by AEMO is to provide information to market participants, consumers, jurisdictional bodies and other interested stakeholders regarding future wholesale market supply reliability and identify the potential for an exceedance of the reliability standard or the interim reliability measure. The reporting metric for this assessment is unserved energy (USE).

The Reliability Panel in consulting on setting the reliability standard is required to consider the economic consequences of setting either too high, or too low a Standard. In considering this the Reliability Panel has carefully considered the views expressed by consumers, market participants, jurisdictional representatives and AEMO. Setting too high a Standard will increase the costs of energy supply to consumers, setting too low a Standard could under some limited circumstances result in loss of productive output for consumers for a relatively short time period. Historically the level of actual USE in any region has been low and has represented less than one percent of overall loss of supply to consumers with the Reliability Panel again noting in their most recent Annual Market Performance Report that, “*Over the past ten years across the whole of the NEM, the vast majority of blackouts have been caused by breakdowns in the grid's poles and wires.*”<sup>10</sup>

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<sup>7</sup> AEMO Regions and Marginal Loss Factors FY2019/20 Section 7

<sup>8</sup> Murray substation whilst physically located in NSW is allocated to the Victorian region

<sup>9</sup> Electricity Statement of Opportunities Reliability Assessment, Short and Medium Projected Assessment of System Adequacy, Energy Adequacy Assessment Projection and Pre-Dispatch.

<sup>10</sup> Reliability Panel 2019 Annual Market Performance Report pp 35



USE has been defined in the NER as; The amount of energy demanded, but not supplied, in a region determined in accordance with clause 3.9.3C(b). Clause 3.9.3C(b) in turn can be summarised as a loss of supply due to a lack of generation supply within a region or a lack of inter-regional network infrastructure to transfer surplus generation supply from a region to a region with a supply deficit. This Clause also sets out that a loss of supply due to a non-credible contingency event or multiple contingency events are to be excluded from the calculation of USE. In addition, loss of supply due to the failure of intra-regional network elements which prevent the delivery of active energy from existing generation or demand response is excluded from the calculation of USE. This carefully worded requirement is to ensure that actual USE is only reported where there is insufficient generation supply or demand response available to service consumer demand, where capacity exists, but is prevented from supplying consumer demand due to intra-regional network capacity, actual USE is not recorded. Whilst this is acknowledged by AEMO in the Report, "*Reliability in this context does not include outages arising from network capacity shortfall or failure impacting demand within a region*",<sup>11</sup> in practice it is unclear this is applied by AEMO in their calculation of forecast USE.

ERM Power considers that the calculation methodology for forecast USE should be consistent with the methodology for calculation of actual USE. We are concerned this is not the case and the current calculation methodology in some areas adopted by AEMO will significantly overstate forecast USE.

AEMO have proposed several changes to their forecast inputs in the 2020 Forecast Improvement Plan.<sup>12</sup> In general we offer conditional support to the majority of these changes pending the provision of additional detail by AEMO to the Forecasting Reference Group.

However, we do not support AEMO's proposal to increase the level of unplanned outage rates applied to the Victoria to South Australia or Victoria to NSW inter-regional network assets based on outcomes associated with failures on intra-regional network elements in southern NSW or Western Victoria in December 2019 and January 2020. In the case of the intra-regional network failures observed in this period, and back in February 2009, sufficient generation supply capability existed to meet AEMO's forecast 10% POE demand and increased inter-regional network capability would not have resulted in increased supply to either Victoria or NSW as even absent the unplanned intra-regional network outages, transfer between these regions is routinely limited due to intra-regional network capability north of Upper and Lower Tumut substations in NSW or south of Murray substation in Victoria.

The observed simultaneous double circuit failure of the intra-regional network assets in western Victoria in January 2020, resulted in a temporary loss of supply to the Portland Aluminum Smelter due to its automatic disconnection by the Network Service Provider's control system in the Victorian region following the non-credible contingency security islanding event and supply was restored to the Smelter within a relatively short period. Even during the extended period required to restore these intra-regional network assets for service, sufficient generation supply and demand response resources remained available at all times to provide uninterrupted supply to consumers.

We consider AEMO's proposed change to increase the forced outage rates for the Victoria to South Australia or Victoria to NSW inter-regional network assets based on these events would suggest the need for the uneconomic provision of additional supply side or inter-regional network assets to reduce or prevent a loss of supply that would not be calculated as actual USE under the NER. We believe this change to be an additional conservative imposition by AEMO to reduce the potential for USE to occur to as close to zero as possible, but which may result in an uneconomic outcome with the effect of increasing supply costs to consumers.

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<sup>11</sup> AEMO 2020 Forecast Accuracy Report pp 77

<sup>12</sup> AEMO 2020 Forecast Accuracy Report Section 8.2 pp 81



AEMO has also proposed to introduce bias in the modelling to align the modelled outages of inter-regional network assets with higher temperature conditions which would generally align with high demand periods in the modelling. We do not support the inclusion of modelling bias in this area and similar to the classification by AEMO of intra-regional network outages as inter-regional network outages to increase modelled failure rates, we believe this change to be an additional conservative imposition to modelling input assumptions by AEMO.

Please contact Ron Logan 0427 002 956 or [rlogan@ermpower.com.au](mailto:rlogan@ermpower.com.au) if you have any questions with regards to this submission.

Yours sincerely,

[signed]

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